

**IN THE CLAIMS**

Please substitute the following listing of claims for the previous listing of claims:

1. (currently amended) A method ~~for~~ of cleaning a chamber of an electron beam treatment apparatus, the method comprising that comprises:  
generating an electron beam that energizes a cleaning gas in a the chamber of the electron beam treatment apparatus;  
monitoring an electron beam current;  
adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and  
stopping when the cleaning gas pressure becomes substantially constant for a predetermined length of time ~~a predetermined condition has been reached.~~
- 2-3. (cancelled).
4. (original) The method of claim 1 wherein the cleaning gas comprises an oxygen-based gas.
5. (original) The method of claim 4 wherein the oxygen-based gas comprises one or more of O<sub>2</sub>, ozone, NO, and H<sub>2</sub>O.
6. (original) The method of claim 1 wherein the cleaning gas comprises a fluorine-based gas.
7. (original) The method of claim 6 wherein the fluorine-based gas comprises one or more of NF<sub>3</sub>, F<sub>2</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, SF<sub>6</sub>.

8. (Currently amended) A method ~~for~~ of cleaning an electron beam treatment chamber, the method comprising that comprises:  
generating an electron beam that energizes a cleaning gas in a the electron beam treatment chamber ~~of the electron beam treatment apparatus;~~ and  
stopping after the cleaning gas pressure becomes substantially constant for a predetermined length of time ~~a predetermined length of time has elapsed.~~
9. (original) The method of claim 8 wherein the cleaning gas comprises an oxygen-based gas.
10. (original) The method of claim 9 wherein the oxygen-based gas comprises one or more of O<sub>2</sub>, ozone, NO, and H<sub>2</sub>O.
11. (original) The method of claim 8 wherein the cleaning gas comprises a fluorine-based gas.
12. (original) The method of claim 11 wherein the fluorine-based gas comprises one or more of NF<sub>3</sub>, F<sub>2</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, SF<sub>6</sub>.
13. The method of claim 8 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.
14. (original) The method of claim 9 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.
15. (original) The method of claim 11 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.

16. (new) A method of cleaning a chamber of an electron beam treatment apparatus, the method comprising:
- Introducing a cleaning gas into the chamber;
  - generating an electron beam that energizes the cleaning gas in the chamber;
  - setting in the chamber, an electron beam current of about 10 mA or above;
  - adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and
  - determining an endpoint of the cleaning process and stopping introduction of the cleaning gas when the cleaning gas pressure reaches a substantially constant value.
17. (new) The method of claim 16 wherein the cleaning gas comprises an oxygen-based gas.
18. (new) The method of claim 17 wherein the oxygen-based gas comprises one or more of O<sub>2</sub>, ozone, NO, and H<sub>2</sub>O.
19. (new) The method of claim 16 wherein the cleaning gas comprises a fluorine-based gas.
20. (new) The method of claim 19 wherein the fluorine-based gas comprises one or more of NF<sub>3</sub>, F<sub>2</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, SF<sub>6</sub>.